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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Alain Lecompte

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EXAMINER

IBRAHIM, MEDINA AHMED

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/554,282	Applicant(s) LECOMPTE, ALAIN	
	Examiner Medina A. Ibrahim	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Applicant's response filed 02/19/08 in reply to the Office action of 11/19/07 has been entered. Claims 1-12 are amended.

All previous objections and rejections not set forth below have been withdrawn in view of Applicant's amendment to the claims and/or upon further consideration.

Claims 1-12 are pending and are examined.

Claim Rejections - 35 USC § 103

Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sidikou-Seyni et al (Plant Cell Tissue and Organ Culture (1992), vol. 29:83-91)) in view of Tan et al (HortScience (1990) 25(11):1396-1398) and Applicant's admitted prior art (Paragraph bridging pages 2 and 3; and page 3, 1st and 2nd full paragraph) and further in view of Delesalle et al (US 6,803,497 B1). This rejection is repeated for the reasons of record as set forth in the last Office action of 11/19/07.

The claims are drawn to a method for obtaining a recombinant Cichorium plant; the method comprising cross-breeding a batch of female plants of a variety of the Cichorium intybus L species with a batch of male plants of a variety of the Cichorium endivia L species and obtaining a F1 generation hybrid plant population; performing a self-fertilization of the F1 generation hybrid plants to obtain F2 generation recombinant plants; selecting F2 generation recombinant plants, wherein the buds or the roots

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thereof do not have any visible alterations caused by a viral, bacterial or fungal infection; forcing the selected F2 generation recombinant plants for 10 to 18 days under the conditions of a nutriment solution temperature from 15°C to 17°C; and room temperature from 15 to 17°C to obtain regenerated buds; and pricking out regenerated buds on an appropriate culture medium to obtain recombinant young plants. The claims are also drawn to said method wherein the recombinant young chicories are selected according to the phenotypes listed in claim 2; said method further comprising self-fertilizing F2 recombining plants to obtain F3 generation recombining plants through cultivating in the ground; forcing F3 generation for 10 to 18 days under nutrient solution and room temperature of 15°C to 17°C to obtain F4 generation recombinant young plants. The claims are further drawn a recombinant plant produced by said methods, wherein the plant has specified phenotypes.

Sidikou-Seyni et al teach a method of producing Cichorium F1 hybrids designated as chicory "474" by crossing Cichorium intybus with Cichorium endivia and methods of regenerating somatic embryos and adult plants by culturing mesophyll protoplasts of the embryogenic clone chicory "474" in culture medium under specified growing conditions. Sidikou-Seyni et al also teach F1 hybrid plants that are phenotypically normal and fertile (see plant regeneration methods on page 89 and discussion on page 90). Because F1 hybrid plants are phenotypically normal, one skilled in the art would not expect to see any visible alterations caused by a viral, bacterial or fungal infection.

Sidikou-Seyni et al teach do not teach the steps of selfing F1 hybrids to produce F2 hybrids and forcing the plants under the specified and room temperature.

Tan et al teach a method for improving marketable yield and quality of hydroponically forced chicory using roots (see Table 1; Figures 3 and 5); the forcing solution consisted of calcium nitrate, magnesium sulfate and potassium nitrate (see paragraph bridging pages 1396 and 1397). The method produced significantly shorter, stockier chicons with increased density and improved yield and with higher marketable yield ratio. The cited reference also talks about the existence of traditional methods for forcing chicory by covering roots with soil based medium, and conventional to produce chicons that are tighter, denser, and high quality (see the whole document).

Sidikou-Seyni et al in view of Tan et al do not explicitly teach F2 generation plants and male sterile hybrid plants.

Applicant's admitted prior art teach that production of F2 generation chicory was known before Applicant's invention. At the paragraph bridging pages 2 and 3 of the specification, it states "inter-specific hybrids of F1 generation between *Cichorium intybus* L and *Cichorium endivia* L have already been described in the prior art. One can more particularly note the hybridization implemented in 1953 by Charles RICK (1953, Proceedings of the American Society for Horticultural Science, vol. 61: 459-466), who has described hybridization events on a field between both these two species. RICK also describes obtaining F2 generation plants produced through self-fertilization of F 1 generation plants on a field."

Delesalle et al (US 6,803,497 B1) teach a method of producing recombinant chicory plants using *Cichorium intybus* and *Cichorium endivia* to produce male sterile F1 hybrid chicory plant species (see claims 9 and 10). Delesalle et al also teach culturing and regenerating recombinant chicory plants and also teach the importance of chicory plants in Agricultural food industry (see the whole document).

Therefore, it would have been obvious to one of ordinary skill in the art to use the method of producing *Cichorium* hybrids by crossing *Cichorium intybus* and *Cichorium endivia* as taught Sidikou-Seyni et al, and to modify that method by incorporating the forcing technique taught by Tan et al to improve the marketable qualities of chicons and the generation of F2 hybrids by selfing the F1 as taught by Applicant's admitted prior art with a reasonable expectation of success. One would have been motivated to produce recombinant chicory hybrids given that Chicory is an important economic plant for its as a vegetable and as an industrial raw material in agricultural food industry as taught by Delesalle et al. One of ordinary skill in the art would also have been motivated to produce F2 hybrid chicory and subsequent generation plants by selfing as taught in Applicant's admitted prior art, given that the agronomic performance of F1 and further generation plants are superior to both parents, typically in vigour, yield, and uniformity as known to one of ordinary skill in the art. Depending upon the specific cultivar employed and the culture conditions used recombinant chicory hybrids having a desired phenotypes including those listed in claims 2 and 8-11 can be produced with a reasonable expectation of success as taught by each of Tan et al and Sidikou-Seyni et al. See also Van Stallen et al (Plant Cell, Tissue and Organ Culture (1999) 55:125-131)

which state “more and more hydroponic forcing in temperature-controlled rooms is used....With both modern and traditional forcing, the yield of good quality chicons remains largely influenced by the physiological condition of the roots at the start of forcing”). Therefore, the invention as whole was a prima facie obvious.

Response to Arguments

Applicant's arguments filed 02/19/08 have been considered but are not deemed persuasive.

Applicants' arguments are basically the following: that Delesalle et al do not teach recombinant plants produced by crossing *Cichorium intybus* and *Cichorium endivia* and that the plant material and method used by Delesalle are different from the method and material used in the claimed invention (response, pp. 11-12).

These are not found persuasive because in this rejection Delesalle et al is relied upon because it provides the motivation to use *Cichorium intybus* and *Cichorium endivia* as the starting material for the production of recombinant male sterile chicory plants. Claims 8 and 9 of the patent teach a method of crossing the recombinant chicory plant having CMS with another chicory plant, and thus suggesting crossing the recombinant male sterile chicory plants (produced from *Cichorium intybus* or *Cichorium endivia* with the helianthus gene) with another chicory plant (*Cichorium intybus* or *Cichorium endivia*). In addition, since the rejection is one of obviousness and not one of anticipation, Delesalle et al need not teach all claim limitations.

Applicant argues that the plant disclosed by Sidikou-Seyni et al are not recombinant plants and that the further plants obtained are still F1 hybrid plants and not F2 as required by the instant claims (response, p. 13).

This is not found persuasive because Sidikou-Seyni et al teach a method of producing F1 hybrid plants by crossing *Cichorium intybus* and *Cichorium endivia*. These are recombinant plants because they are produced by crossing two different plant species, as also it is in Applicant's claimed invention. Since the rejection is one of obviousness and not one of anticipation, Sidikou-Seyni et al need not teach F2 generation plants. Applicant's admitted prior art teaches F1 generation hybrid plants produced by *Cichorium intybus* L with *Cichorium endivia* and F2 generation plants produced through self-fertilization of F 1 generation plants have already been described in the prior art. One of ordinary skill in the art can produce further generation plants by selfing F2 to produce F3 plants; and selfing F3 to produce F4 plants.

See *KSR International Co. v. Teleflex Inc.* (KSR), 550 U.S. ___, 82 USPQ2d 1385 (2007) where it states "[w]hen a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Id.* at ___, 82 USPQ2d at 1396." The court also states "[t]he obviousness analysis cannot be confined by . . . overemphasis

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on the importance of published articles and the explicit content of issued patents. . . .

In many fields it may be that there is little discussion of obvious techniques or combinations, and it often may be the case that market demand, rather than scientific literature, will drive design trends.” KSR , 550 U.S. at ____, 82 USPQ2d at 1396.

The MPEP 2141, section III states “[p]rior art is not limited just to the references being applied, but includes the understanding of one of ordinary skill in the art. The prior art reference (or references when combined) need not teach or suggest all the claim limitations, however, Office personnel must explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art. The “mere existence of differences between the prior art and an invention does not establish the invention’s nonobviousness.” Dann v. Johnston, 425 U.S. 219, 230, 189 USPQ 257, 261 (1976).

Remarks

No claim is allowed.

Contact information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Medina A. Ibrahim whose telephone number is (571)272-0797. The examiner can normally be reached on M-TH 8:00 am to 5:30 PM, and every other Friday from 8:00 AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MAI
7/7/2008

/Medina A Ibrahim/
Primary Examiner, Art Unit 1638